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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/669,620 | 09/24/2003 | Daniel B. Roitman | 10030589-1 | 5622 |

7590 06/21/2006

AGILENT TECHNOLOGIES, INC.
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| EXAMINER |
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JUNG, UNSU

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| ART UNIT | PAPER NUMBER |
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1641

DATE MAILED: 06/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|---------------------------------------|--|
| Office Action Summary | Application No. 10/669,620 | Applicant(s) ROITMAN ET AL. | |
| | Examiner Unsu Jung | Art Unit 1641 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-33 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicants' preliminary amendments to claims 1, 3, 13, 18-28, 30, and 32 in the reply filed on February 17, 2004 have been acknowledged and entered.
2. Claims 1-33 are pending.

Election/Restrictions

3. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-19 and 29 drawn to microbead particle system for bioassay, classified in class 524, subclass 17, for example.
 - II. Claims 20-28, 32, and 33, drawn to a method for fabricating and identifying at least one polymeric microbead, classified in class 436, subclass 531, for example.
 - III. Claims 30 and 31, drawn to a reader for identifying at least one microbead, classified in class 422, subclass 82.05, for example.
4. The inventions are distinct, each from the other because of the following reasons:
5. Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make another and materially different product or (2)

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that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed can be made by another and materially different process. For example, the microbead particle of Group I can be encoded by patterning quantum dots.

6. Inventions I and III are independent and patentably distinct. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different designs, modes of operation, and effects (MPEP § 802.01 and § 806.06). In the instant case, the product of Group I includes a microbead particle made of polymeric material, which is not required by the product of Group III. The product of Group III includes a recorder capable of storing an enlarged image, which is not required by the product of Group I. Therefore, the products of Groups I and III have different designs, modes of operation and effects.

7. Inventions II and III are independent and patentably distinct. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different designs, modes of operation, and effects (MPEP § 802.01 and § 806.06). In the instant case, the method of Group II includes a step of creating a pattern master substrate, which is not required by the product of Group III. The product of Group III includes a recorder capable of storing an enlarged image, which is not required by the product of Group II. Therefore, the products of Groups I and III have different designs, modes of operation and effects.

8. Because these inventions are independent or distinct for the reasons given above, have acquired a separate status in the art because of their recognized divergent subject matter, and searches for one group are not required by the others, restriction for examination purposes as indicated is proper.

Election of Species within Group I

9. This application contains claims directed to the following patentably distinct species of the claimed invention I. If Group I is elected, the applicant is required to elect one species from each of the following lists of species.

List I: polymeric material (claim 2)

- a. thermoplastics
- b. thermosets
- c. photocrosslinkable resins
- d. photopolymerizable resins
- e. organosilicon resins

List II: layer of material on or within the polymeric material (claims 4 and 5))

- a. dielectric materials
- b. SiO₂
- c. TiO₂
- d. tantalum pentoxide
- e. aluminum silicate
- f. titanium nitride
- g. metals
- h. silver
- i. gold
- j. copper
- k. nickel
- l. palladium
- m. platinum

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- n. cobalt
- o. rhodium
- p. iridium
- q. photoluminescent compounds
- r. aluminum tris (8-hydroxyquinoline)
- s. hydroxyquinoline aluminum chelate
- t. N-p-methoxyphenyl-N-phenyl-p-methoxyphenyl-stryrylamine
- u. diphenyl-p-t-butylphenyl-1,3,4-oxadiazole
- v. 4-dicyanomethylene-2-methyl-6-(p-dimethylamino styryl)-4H-pyran
- w. polymer blends containing photoluminescent polymers
- x. polymer blends containing poly(phenylenevinyls)
- y. polymer blends containing poly(fluorenes)
- z. polymer blends containing polythiophenes
- aa. electromagnetically transducing material

List III: pattern (claims 7-16)

- a. symmetrical (claim 7)
- b. at least one unit cell repeated and capable of generating a diffractive image (claims 8-10)
- c. a plurality of regions being capable of producing a plurality of electromagnetic responses generating a binary code (claims 11, 12, and 15)
- d. triangles (claims 13 and 14)
- e. circles (claims 13 and 14)
- f. squares (claims 13 and 14)
- g. crosses (claims 13 and 14)
- h. diamonds (claims 13 and 14)
- i. parallelograms (claims 13 and 14)
- j. semicircles (claims 13 and 14)
- k. ridges and troughs/interference pattern (claim 16)

List IV: color (claim 14)

- a. color dyes
- b. color absorbing dyes
- c. pigments
- d. dielectric coatings

List V: one portion (claims 17 and 19)

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- a. surface opposing a first patterned surface; and a second embossed polymeric material having a second inner surface opposing a second patterned surface, wherein said first inner surface forms a bond with said second inner surface (claim 17)
- b. a metallic layer and a dielectric stack (claim 19)

The species are independent or distinct because each material used for polymeric layer, the layer of material on or within the polymeric layer, and one portion of the microbead particle is chemically and structurally distinct. Furthermore, each pattern created by using different shapes and color results in a structurally and optically distinct pattern.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claims 1, 3, 6, and 18 are generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which depend from or otherwise require all the limitations of an allowable generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species.

MPEP § 809.02(a).

Election of Species within Group II

10. This application contains claims directed to the following patentably distinct species of the claimed invention II. If Group II is elected, the applicant is required to elect one species from each of the following lists of species.

List I: method of applying polymeric material (claims 21, 24, and 25)

- a. embossing (claim 21)
- b. casting a liquid resin (claims 21 and 24)
- c. injection molding a liquid resin (claims 21 and 25)
- d. infusing a liquid resin (claim 21)

List II: partitioning of polymeric material (claim 22)

- a. dry etching
- b. cutting using laser ablation
- c. dissolving

List III: liquid resin (claim 26)

- a. epoxide-based resist
- b. silicon-based resins
- c. silsesquioxanes
- d. poly(dimethylsiloxane) (PDMS)
- e. poly(phenylmethylsiloxane)
- f. phenolic resins
- g. novolac resins
- h. epoxides
- i. bisphenol A-based resins
- j. urethane acrylates
- k. acrylates
- l. ultra-violet adhesives
- m. optical adhesives
- n. thermoplastic resins
- o. polystyrene
- p. poly(methyl methacrylate)
- q. polycarbonate

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- r. thermoplastic polyimides
- s. poly(ethylene terephthalate)
- t. polyurethanes
- u. poly(ether ether ketone)
- v. polyethylene

List III: pattern master substrate (claim 28)

- a. silicon
- b. quartz
- c. aluminum oxide
- d. glass
- e. stainless steel
- f. copper
- g. chromium
- h. nickel
- i. brass

The species are independent or distinct because each method used for applying or partitioning polymeric material requires patentably distinct process. Furthermore, each material used for liquid resin and pattern master substrate is chemically and structurally distinct.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claims 20, 23, and 27 are generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which depend from or otherwise require all the limitations of an allowable generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

11. Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species or invention to be examined even though the requirement be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

The election of an invention or species may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse.

Should applicant traverse on the ground that the inventions or species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions or species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C.103(a) of the other invention.

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12. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Unsu Jung whose telephone number is 571-272-8506. The examiner can normally be reached on M-F: 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on 571-272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

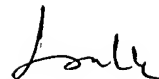
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Unsu Jung, Ph.D.
Patent Examiner
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